CORRIGENDUM: Fault-tolerant quantum computation with a soft-decision decoder for error correction and detection by teleportation

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The Supplementary Information of this Article contains errors. The physical-qubit interchanges are unnecessary in Figures S9 and S10. The correct Figures S9 and S10 appear below as Figures 1 and 2 respectively. In addition the figure legends of S9 and S10 should not contain the sentence ``The qubit interchanges after the Hadamard gates come from the definition of the encoded Hadamard gate (see Fig. S1a)''. Corresponding to this correction, in both the hard- and soft-decision decoding algorithms, the definition of the logical X gate, instead of the logical Z gate, is used for $\{m_{zj}: j=1, 2, \frac{1}{4}, 12\}$.

In addition the equations for the relative probabilities for $R_1^{(1)}(d_{x1}, d_{x2}, d_{z1}, d_{z2})$ and $R^{(2)}(d'_{x1}, d'_{x2}, d'_{z1}, d'_{z2})$ in Section IIIC (``Soft-decision decoding algorithm'') contain errors.

In $R_1^{(1)}(d_{x1}, d_{x2}, d_{z1}, d_{z2})$:

$$\delta[l_{z1}+l_{z3}=d_{z1}]\delta[l_{z3}+l_{z4}=d_{z2}],$$

should read

$$\delta[l_{z1}+l_{z2}=d_{z1}]\delta[l_{z2}+l_{z4}=d_{z2}],$$

And in $R^{(2)}(d'_{x1}, d'_{x2}, d'_{z1}, d'_{z2})$:

$$\times \delta[d_{x1}+d_{x3}+d_{x4}=d'_{x1}]\delta[d_{x4}+d_{x5}=d'_{x2}]$$
$$\times \delta[d_{z1}+d_{z3}+d_{z4}=d'_{z1}]\delta[d_{z4}+d_{z5}=d'_{z2}].$$

should read

$$\times \delta[d_{x3}+d_{x4}+d_{x6}=d'_{x1}]\delta[d_{x4}+d_{x5}=d'_{x2}]$$
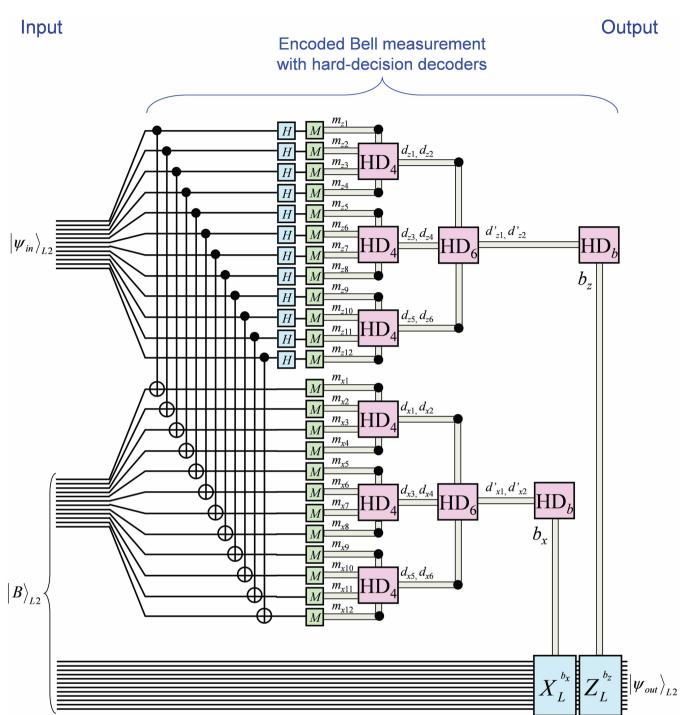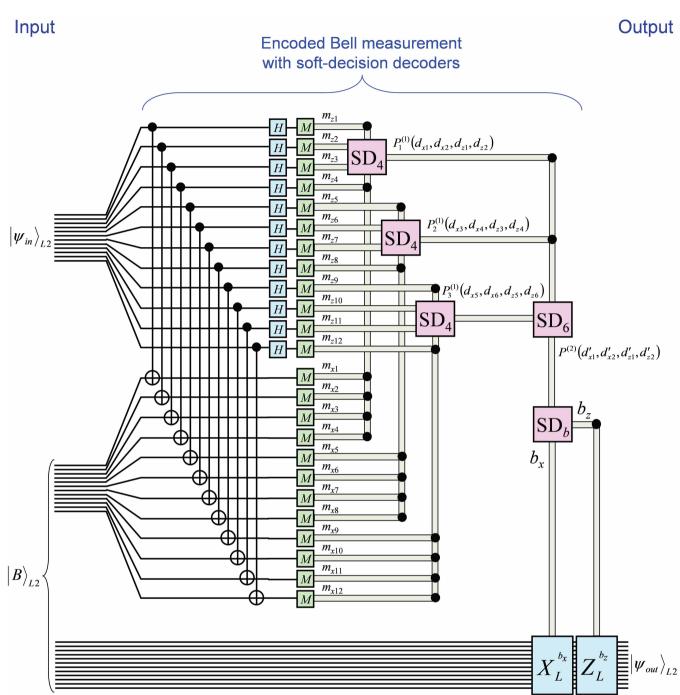$$\times \delta[d_{z2}+d_{z3}=d'_{z1}]\delta[d_{z1}+d_{z3}+d_{z4}=d'_{z2}],$$

Figure 1 |

Figure 2